



## Terry Tamminen

Agency Secretary

Cal/EPA

## Department of Toxic Substances Control



8800 Cal Center Drive Sacramento, California 95826-3200

October 15, 2004

Mr. David E. Steckel Remedial Project Manager AFFTC/EMR 5 East Popson, Building 2650A Edwards Air Force Base, California 93524-1130

CONCURRENCE ON THE FINAL FEASIBILITY STUDY, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, DRYDEN FLIGHT RESEARCH CENTER, OPERABLE UNIT NO. 6, EDWARDS AIR FORCE BASE, CALIFORNIA, AUGUST 2004

Dear Mr. Steckel:

The Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB), Lahontan Region (collectively, the State) have reviewed the above cited Feasibility Study (FS).

This FS summarizes the backgrounds, plume characteristics, and remedial action alternatives evaluated for sites recommended for remedial action within Operable Unit 6 (OU-6). The report includes preliminary cleanup goals, technical approach comparisons, and cost comparisons of applicable remedial alternatives. Sites in OU-6 are not currently used for residential purposes, nor is such use anticipated; therefore, the FS focuses on industrial use considerations.

The Operable Unit 6, Remedial Investigations (RI) Summary Report (OU-6 RI) summarizes investigation of 19 sites, identifies those sites requiring remedial action, and provides the primary source of information for the FS. Based upon the results of the OU-6 RI, the Remedial Project Managers (RPMs) approved a recommendation of no further investigation (NFI) for 16 of the 19 OU-6 sites. A 20<sup>th</sup> site has been designated as a petroleum-only site and has been removed from the Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA) process. The three remaining active sites (N2, N3, and N7) were identified as the sources of a commingled volatile organic compound

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(VOC) plume. Remediation of this plume is the focus of the remedial alternatives presented in this FS.

Five remedial alternatives (present value included) were developed and retained for detailed analysis:

- Alternative 1 Access restrictions \$125,600
- Alternative 2 Groundwater Monitoring/Hydrologic Control (with access restrictions) - \$1,342,500
- Alternative 3 Chemical Reaction (with access restrictions) -\$71,458,900
- Alternative 4 Source Control and Hydrologic Control with Groundwater Monitoring (with access restrictions) - \$1,905,800
- Alternative 5 No Action \$0

Based on the screening of alternatives, evaluation and comparative analysis of retained alternatives, and the intended use of Dryden, the preferred alternative recommended for the Proposed Plan is Source Control and Hydrologic Control with Groundwater Monitoring (Alternative 4). Alternative 4 is protective of human health and the environment and consists of the following:

- In-situ chemical reaction of the plume source area using permanganate.
- The natural dispersion and dilution of residual contaminants to effectively reduce contaminants to levels below those specified by drinking water standards.
- Management of the Edwards AFB Geographic Information System as
  it relates to the extent of contamination at the site (as part of a
  Base-wide program). This information, in addition to well location
  data, is used to control site activities (such as excavation) and/or
  determine proper protective equipment to be employed during
  intrusive activities (Institutional Controls).
- Long-term groundwater monitoring within the TCE plume and at the leading edge.
- Five-year reviews and associated data acquisition through groundwater sampling. Supporting documentation, including groundwater monitoring results and modeling predictions, is used to evaluate progress toward reducing concentrations to cleanup levels.

The State concurs with the Feasibility Study.

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Should you have any questions, please contact Mr. John O'Kane, DTSC's Project Manager, at (916) 255-3715, or Ms. Elizabeth Lafferty, at the RWQCB, at (760) 241-7384.

Sincerely,

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Anthony J. Låndis, P.E.

Chief -

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